



## Environmental Management Directorate

### Quality Assurance Program Description

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## **INTRODUCTION**

The Environmental Management Quality Assurance Program Description has been established to address the ten management, performance, and assessment criteria contained in 10 CFR 830.120 as specified in the BNL Quality Assurance Description and Implementation Plan. Performing quality work and implementing a quality program is the responsibility of all EM Program staff members conducting task-specific activities and is applied in a graded approach manner suitable for work to be performed at a Radiological Facility and/or any lower classification for work within the Directorate. The Environmental Management (EM) Programs refer to the Reactor Projects (BGRR & HFBR), Surface Projects, (OU I, Boneyard & Legacy Waste), Groundwater (OU III, OU VI), OU V (Sewage Treatment Plant, Peconic River), Business Support, Project Controls, Regulatory Affairs and Operations Support. With the addition of the Waste Management Division (WMD) and the Brookhaven Medical Research Reactor (BMRR), the EM Programs make up the EM Directorate.

This Quality Assurance program description refers only to the EM Programs primarily because the WMD and the BMRR are categorized as Class A Facilities, and have separate QA programs.

In addition to the requirements of the BNL Quality Assurance (QA) Program Description and Implementation Plan, the EM Program also utilizes and complies with the Interagency Agreement, dated January 21, 1992, for all environmental projects. The EM Quality Assurance Program Description has been prepared to identify the implementing procedures for EM compliance with the noted programs. These procedures apply to all EM activities, using a graded approach suitable for a Radiological Facility. Training in this guideline and associated implementation procedures will be provided to all personnel assigned to perform work in and for EM commensurate with their job responsibilities.

Subcontractor personnel (when contractually invoked) in the performance of task-specific work activities, or with, EM and supportive management systems are encouraged to contribute recommendations for Quality Assurance Program Description revisions to improve its usefulness, accuracy, and completeness. Recommended revisions should be submitted to the EM Quality Assurance Program Manager. The quality program applies to all EM personnel.

## 1. PROGRAM

### 10CFR PART 830.120, CRITERION 1 – PROGRAM, STATES:

*A written QAP shall be developed, implemented, and maintained. The QAP shall describe the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work. The QAP shall describe management processes, including planning, scheduling, and resource considerations.*

The EM Quality Assurance Program Description applies to all EM activities and should not be regarded as the sole domain of any single group within EM. The program operates on the concept that all work is a process that can be planned, managed, performed, assessed, and improved in accordance with the principles of Integrated Safety Management. Therefore, quality should be an attribute of all planning and work activity.

The Quality Assurance Program Description has been developed primarily to meet the basic requirements of 10CFR830.120 and DOE Order 414.1A to assure that the commitments in the BNL Environmental Stewardship Policy, as defined in the Division Environmental Management System, are maintained.

The Director, Environmental Management and the EM management team has full ownership of the EM Quality Assurance Program Description. These managers establish policies and performance objectives focused on achieving the EM mission while improving the quality of the performance. The management staff shall continually endeavor to create and maintain an environment that promotes quality, the improvement of quality throughout the programs, and the effective and efficient achievement of performance objectives. Furthermore, employees shall exercise their stop work authority, as outlined throughout this guide, based on perceived or apparent loss of quality or quality control or where questions of confidence in work performed may exist.

The policies, requirements, and responsibilities contained in this EM Quality Assurance Program Description have the endorsement and support of the Brookhaven National Laboratory-Brookhaven Science Associates (BNL-BSA) Quality Management Office.

The EM Quality Assurance Program Description implements Criterion 1, Program requirements, as described in the BNL Quality Assurance Program Description. They are applied in a graded approach manner suitable for work to be performed at a Radiological Facility and/or any lower classification for work within the Programs.

EM will conduct an annual review for compliance with all applicable regulatory and BNL program requirements for quality assurance as part of their Environmental Management System (EMS) annual Self-Assessment.

### **Responsibilities**

The Director, Environmental Management or designee is responsible to:

- Review and approve program plans and activities to identify areas needing improvement.
- Overall implementation of the EM Quality Assurance Program Description.
- Implement quality requirements and principles that are consistent with the risk and importance of activities.

The EM Operations Support Group Manager is responsible to:

- Provide the EM Quality Assurance Program Manager with the necessary information and support to properly implement the EM Quality Assurance Program Description.

The EM Quality Assurance Program Manager is responsible to:

- Assist the Programs in planning, development and implementation of the Quality Assurance Program Description.
- Communicate quality related requirements to the EM staff.
- Facilitate the EM Continuous Quality Improvement Program.
- Provide Quality Training to EM staff and guests/visitors, as required.
- Implement the EM Condition Reporting System for compliance with the BNL Non-conformance Program, as described in SBMS.
- Implement the EM Tracking and Trending Program.

All EM personnel and subcontractors are responsible for:

- Implementation of, and compliance with, the EM Quality Assurance Program Description as described, and the BNL Quality Assurance Program Description.
- Alert the Group Manager, the Quality Assurance Program Manager, or designee of any quality-related Condition Reports or the need to issue a stop work order.

## **2. PERSONNEL TRAINING AND QUALIFICATION**

### **10CFR PART 830.120, CRITERION 2 – PERSONNEL TRAINING AND QUALIFICATION, STATES:**

*Personnel shall be trained and qualified to ensure they are capable of performing their assigned work. Personnel shall be provided continuing training to ensure that job proficiency is maintained.*

The EM Quality Assurance Program Description implements Criterion 2, Personnel Training and Qualification, requirements, as described in the BNL Quality Assurance Program Description. To accomplish this, EM has implemented, as described in the EM Operations Manual (OPM), [EM OPM 5.7.1, EM Training and Qualification Management System](#).

## **3. QUALITY IMPROVEMENT**

### **10 CFR 830.120, CRITERION 3 - QUALITY IMPROVEMENT, STATES:**

*Processes to detect and prevent quality problems shall be established and implemented. Items, services, and processes that do not meet established requirements shall be identified, controlled, and corrected according to the importance of the problem and the work affected. Correction shall include identifying the causes of problems and working to prevent recurrence. Item characteristics, process implementation, and other quality-related information shall be reviewed and the data analyzed to identify items, services, and processes needing improvement.*

The EM Quality Assurance Program Description implements Criterion 3, Quality Improvement requirements, as described in the BNL Quality Assurance Program Description.

To implement this, EM utilizes or references various SBMS Programs, including:

- [Occurrence Reporting and Processing Systems \(ORPS\)](#)
- [PAAA Compliance Validation and Noncompliance Reporting Program](#)
- [Corrective Action Management and Tracking for Internal and External Assessments](#)
- [Community Outreach components of the EM EMS Program](#)
- [Radiological Awareness Report](#)
- [Nonconformance and Corrective and Preventative Actions](#)
- [Lessons Learned](#)
- [Tier I Program](#)

There are many programs within EM that capture, document, analyze and control corrective/preventative actions. These include:

- [EM Condition Reporting System](#)
- [EM Self-Assessment Plan](#)
- Independent Assessment
- Internal Surveillance and Audits
- External Audits
- Tracking and Trending

These programs, along with the BNL SBMS programs, ensure a comprehensive review of all EM projects and operations from field personnel through upper management. Corrective and preventative actions are identified and tracked utilizing the applicable Family or BNL Actions Tracking System (ATS).

EM has developed a Tracking and Trending Program that will increase the directorate's awareness and involvement in areas that may need improvement.

As mentioned previously, there are many programs EM utilizes to identify improvement opportunities. When an opportunity for improvement has been identified the corrective/preventative action is tracked in the Operations Support Family ATS until closure. In addition, specific assessment information is identified and captured for trending purposes. This includes the record type, EM Organization, and the action cause code.

The action cause codes include design, equipment or material problems, personnel error, procedure or training deficiencies, radiological hazards, work planning and external phenomenon. The action cause code may also include improvement initiatives. These cause codes may at times be subjective, so to provide consistency in evaluating improvement opportunities, they should be identified by either the EM Quality Assurance Program Manager, the Operations Support Group Manager or an appropriate designee.

Tracking and Trending Program information should be reviewed and reported quarterly. Significant trends should be reviewed with the appropriate Group Manager(s) along with potential process improvement opportunities.

Also, the EM Quality Assurance Program Description recognizes the commitment to quality improvement through community outreach and participation in the decision-making processes of EM, demonstrated by Public Roundtable Discussions, presentations before Community Advisory Council, and the maintenance of a public accessible web page with two-way communication.

#### **4. DOCUMENTS AND RECORDS**

##### **10 CFR PART 830.120, CRITERION 4 - DOCUMENTS & RECORDS, STATES:**

*Documents shall be prepared, reviewed, approved, issued, used, and revised to prescribe processes, specify requirements, or establish design. Records shall be specified, prepared, reviewed, approved, and maintained.*

The EM Quality Assurance Program Description implements Criterion 4, Documents and Records requirements, as described in the BNL Quality Assurance Program Description.. To implement this, EM complies with the requirements as stated in SBMS Subject Area, [Records Management](#).

#### **5. WORK PROCESSES**

##### **10 CFR PART 830.120, CRITERION 5 - WORK PROCESSES, STATES:**

*Work shall be performed to established technical standards and administrative controls using approved instructions, procedures, or other appropriate means. Items shall be identified and controlled to ensure their proper use. Items shall be maintained to prevent their damage, loss, or deterioration. Equipment used for process monitoring or data collection shall be calibrated and maintained.*

The EM Quality Assurance Program Description implements Criterion 5, Work Processes requirements, as described in the BNL Quality Assurance Program Description.

To implement this, EM has established a number of procedures in [the EM Operations Procedures Manual](#).

In addition, EM utilizes Temporary Procedures to control certain activities along with the following other documents:

- Code of Federal Regulations, Department of Transportation Regulations, 49 CFR 100-179
- Division of Waste Management Procedures
- BNL RadCon Manual, Associated Facility Support, and Institutional RadCon Procedures

## 6. DESIGN

### 10 CFR PART 830.120, CRITERION 6, - DESIGN, STATES:

*Items and processes shall be designed using sound engineering/scientific principles and appropriate standards. Design work, including changes, shall incorporate applicable requirements and design bases. Design interfaces shall be identified and controlled. The adequacy of design products shall be verified or validated by individuals or groups other than those who performed the work. Verification and validation work shall be completed before approval and implementation of the design.*

The EM Quality Assurance Program Description implements Criterion 6, Design requirements, as described in the BNL Quality Assurance Program Description.

To implement this, EM utilizes the following:

- [ESH 1.3.0, Review of Facility Design](#)
- [ESH 1.3.3, Safety Analysis Reports/Safety Assessment Documents](#)
- [ESH 1.5.2, Design Criteria for Electrical Equipment](#)
- [SBMS Subject Area - Graded Approach for Quality Requirements](#)
- [SBMS Subject Area – Engineering Design](#)

## 7. PROCUREMENT

### 10 CFR PART 830.120, CRITERION 7 – PROCUREMENT, STATES:

*Procured items and services shall meet established requirements and perform as specified. Prospective suppliers shall be evaluated and selected on the basis of specified criteria. Processes to ensure that approved suppliers continue to provide acceptable items and services shall be established and implemented.*

The EM Quality Assurance Program Description implements Criterion 7, Procurement requirements, as described in the BNL Quality Assurance Program Description. To implement this, EM utilizes the BNL procurement system, controlled by the BNL Division Procurement and Property Management.

## 8. INSPECTION AND ACCEPTANCE TESTING

### 10 CFR PART 830.120, CRITERION 8 - INSPECTION AND ACCEPTANCE TESTING, STATES:

*Inspection and testing of specified items, services, and processes shall be conducted using established acceptance and performance criteria. Equipment used for inspections and tests shall be calibrated and maintained.*

The EM Quality Assurance Program Description implements Criterion 8, Inspection and Acceptance Testing requirements, as described in the BNL Quality Assurance Program Description.

To accomplish this, EM utilizes various [EM Operations Procedures](#), [Environmental Services Standard Operating Procedures](#) (SOPs) and BNL Subject Areas:

- [Calibration](#)
- [Inspection and Acceptance](#)
- [Suspect/Counterfeit Items](#)
- [Purchase Requisition Review for Quality Related Requirements](#)
- [Material Requiring Special Handling \(Including Age Sensitive Material\)](#)

## 9. MANAGEMENT ASSESSMENT

### 10 CFR PART 830.120, CRITERION 9 - MANAGEMENT ASSESSMENT, STATES:

*Managers shall assess their management processes. Problems that hinder the organization from achieving its objectives shall be identified and corrected.*

The EM Quality Assurance Program Description implements Criterion 9, Management Assessment requirements, as described in the BNL Quality Assurance Program Description.

To accomplish this, EM utilizes the requirements provided in the [EM Self-Assessment Plan](#).

## 10. INDEPENDENT ASSESSMENT

### 10 CFR PART 830.120, CRITERION 10 - INDEPENDENT ASSESSMENT, STATES:

*Independent assessments shall be planned and conducted to measure item and service quality, to measure the adequacy of work performance, and to promote improvement. The group performing independent assessments shall have sufficient authority and freedom from the line to*

*carry out its responsibilities. Persons conducting independent assessments shall be technically qualified and knowledgeable in the areas assessed.*

The EM Quality Assurance Program Description implements Criterion 10, Independent Assessment requirements, as described in the BNL Quality Assurance Program Description. To accomplish this, EM utilizes the services of the BNL Quality Management Office, Independent Oversight Office and external Audits for Independent Audits and Assessments.